

## CLAIMS:

A process for producing an olefin-based copolymer, which comprises copolymerizing at least one olefin selected from the group consisting of ethylene and straight chain  $\alpha$ -olefins,  
5 a vinyl compound (I) described below and a polyene (II) described below:

Vinyl compound (I): a vinyl compound represented by the general formula  $\text{CH}_2=\text{CH}-\text{R}$ , wherein the substituent R is a saturated hydrocarbon group and steric parameters Es and B1  
10 of the substituent R are respectively -1.64 or less and 1.53 or more; and

Polyene (II): a compound having two or more of ethylene bonds and at least one combination of two ethylene bonds in which those are bonded to each other through at least three  
15 carbon atoms.

2. The process according to claim 1, wherein the substituent R of the vinyl compound (I) is a secondary alkyl group, a tertiary alkyl group or a cycloalkyl group.

3. The process according to claim 1, wherein the vinyl  
20 compound (I) is vinylcyclohexane.

4. The process according to claim 1, wherein the polyene (II) is an aliphatic compound.